Amendments to the Specification:

Please replace the paragraph beginning at page 7, line 3 with the following amended paragraph:

The membrane 48 can also be fabricated from a sintered metal disc, coated or uncoated with polymer, to achieve a similar vaporization performance. The substrate 48b ~~48a~~ is comprised of one of a variety of polymer systems, including polyethylene, polypropylene, nylon, polyurethane, or other analogous polymers or composites of one or more of these polymers. The substrate 48b ~~48a~~ can also be fabricated from a sintered metal form, coated or uncoated with polymer, to achieve a similar performance.

Please replace the paragraph beginning at page 7, line 9 with the following amended paragraph:

In some embodiments the material of substrate 48b ~~48a~~ can have further qualities of a "sponge-like" material. An opposite surface of the substrate ~~sponge material~~ 46b is coated with a methanol-impermeable layer 48c, which can be fabricated from materials such as a cross-linked rubber, a polymer/inorganic composite, a surface treated material such as surface fluorinated high density polyethylene, or other methanol-impermeable material.

Please replace the paragraph beginning at page 10, line 22 with the following amended paragraph:

Referring to FIG. 4A, an example of a fuel valve ~~70~~ having an integrated vaporization-heating unit is shown. The fuel valve ~~70~~ is illustrated as the egress 32 for the embodiment of the cartridge 12 shown in FIG. 4 including membrane arrangement 46. The egress 32 is depicted as ~~a valve 33~~ having an integrated heating element 73. The fuel valve ~~33~~ is supported on the cartridge wall 65 and includes the heating element 73 arranged in any one of a variety of configurations such as disposed in the center of the valve as shown, or disposed about the sidewalls of the valve (not shown) or integrated into the sidewalls (not shown). The heating element is disposed to increase the rate of vaporization across the membrane 46. The valve can

have various mechanisms to secure it to a device during use, such as a bayonet connection, threaded connection and so forth.

Please replace the paragraph beginning at page 12, line 4 with the following amended paragraph:

Referring to FIG. 7, an arrangement 110 to enhance vapor delivery by providing additional volume to the vapor phase chamber 74 is shown. The vapor side 90 of the fuel cartridge 12 including piston 92 and internal spring 94, as in FIG. 5, is augmented with an arrangement 110 to increase the effective volume of the vapor chamber 74 of the cartridge 12. Additional volume is provided to the vapor phase chamber 74 by an external chamber 112 that is disposed around the outer surface of the cartridge 12 and which is in vapor communication with the internal vapor chamber 74. The external chamber 112 has a vapor impermeable piston 114 that is urged against vapor in the outer chamber 112 in the cartridge 12 by one or more outer spring mechanisms 116 disposed between the vapor impermeable piston 114 and the fuel cell 18, adjacent the egress port 32 of the cartridge 12. As the vapor pressure increases, the increase in vapor pressure causes the piston 114 to move in a manner that increases the volume of the external chamber 112 ~~114~~.

Please replace the paragraph beginning at page 12, line 16 with the following amended paragraph:

One embodiment of the vapor impermeable piston 114 is a solid sealing material or metal coated with sealing material such as polyfluoroalkenes, fluoroelastomers, and rubbers, e.g., silicone, fluorosilicone, nitrile neoprene, natural, or polyurethane. A metal core can be included in the ring piston to provide mechanical rigidity. The external chamber 112 ~~114~~may be an expandable gas volume of fuel vapor, anode reaction product, and possibly inert gas (such as nitrogen). The contracting volume opposing the external chamber 112 ~~114~~ (i.e., on the opposite side of the ring piston) is preferably vented to an external ambient to avoid pressure buildup inside the external chamber 112 ~~114~~.

Please replace the paragraph beginning at page 12, line 24 with the following amended paragraph:

The expansion may be independent of liquid depletion as shown here with independent springs. Alternatively, the outer ring piston may be connected mechanically (or magnetically if desired) to slide in parallel with the inner piston movement with liquid depletion. Furthermore, the vapor side cavity may be shaped (e.g., cone-like) to allow for an increasing volume expansion as the fuel depletes. Vapor-side expansions greater than the liquid contraction do have the disadvantage of requiring additional overall volume.

Please replace the paragraph beginning at page 13, line 18 with the following amended paragraph:

The fuel cartridge 12 draws heat away from heat dissipating component 19 in the electric device 10. Heat will be transferred across the thermally conductive wall 12a of the fuel cartridge 12 and will provide a concomitant increase in the pressure of methanol vapor within the cartridge 12. The increase in vapor pressure enables faster vapor flow through the separator membrane 44. This technique provides a fuel cartridge 12 with a passive system that provides enhanced methanol vapor pressure and hence greater energy delivery to the fuel cell. In addition, the use of the fuel cartridge 12 as a heat sink may significantly reduce the need for a cooling fan (also an energy drain on the device) to enhance device efficiency and increase run time of the device. The exact configuration of the fuel cartridge 12 could be dependent on the configuration of the device 10, the amount of heat generated by the device and the presence or absence of a fan.

Please replace the paragraph beginning at page 13, line 28 with the following amended paragraph:

Configurations of the fuel cartridge 12 can include[[,]] a metal or other thermally conductive material wall 12a that is combined with remaining, thermally insulating walls 12b of the fuel cartridge 12 ~~12b~~. The thermally conductive walls 12a would be disposed in direct contact with the heat source 19 in the device or at least in close proximity to the heat source 19,

or in an air flow path (not shown) that is used to remove heat from the heat source 19. Alternatively, the thermally conductive can be an upper portion of the fuel cartridge 12 adjacent the fuel egress port 32 and in general alignment with the vapor chamber provided in the cartridge. In some embodiments, the housing of the fuel cartridge 12 can be completely comprised of metal or other thermally conductive material. The fuel cartridge can take various shapes including the prismatic type depicted, cylindrical types depicted in FIGS. 1, 2A-2D and so forth.